220. (New) The method of claim 217, further comprising repeating said placing, exposing, allowing and removing one or more additional times with one or more additional compositions.--

REMARKS

Reconsideration of the present application is respectfully requested. The application, as amended, includes claims 1, 2, 4, 6-31, 38-46, 48-50, 101, 103, 104, 106, 147-151, 153, 154, 166, 168, 169 and 202-220 pending and under consideration.

Preliminary Matters

Applicants acknowledge and thank the Examiner for the indication in the outstanding Office Action that claim 204 is allowed and that claim 45 would be allowable if written in independent form including all of the limitations of the base claim. For the reasons set forth herein, Applicants submit that claim 1 is also in condition for allowance, and that this objection to claim 45 is therefore overcome.

Applicants also acknowledge the indication in the outstanding Office Action that claims 204 and 205 have been renumbered as claims 203 and 204, respectively. In view of this renumbering, Applicants have numbered the new claims presented herein beginning with number 205, as if claims 203 and 204 had been numbered in this manner from the time of their entry. If it is the Examiner's position that the new claims should be numbered beginning with 206, Applicants are willing to submit an amendment of the claim numbers to achieve this purpose.

Applicants also acknowledge and thank the Examiner for the indication in the outstanding Office Action that the previously made restriction requirement between Group I claims and Group II claims is withdrawn. The Examiner has, however, maintained the election

of species requirement "because there are many different possible combinations of the first precursor molecule and the second precursor molecule, and each different combination would require different search." (Office Action, page 2). In view of the species election requirement, the Examiner has withdrawn claims 6-8, 12-19, 25-31, 38-42, 44, 166, 168 and 169 as being drawn to nonelected species.

Applicant submits that a number of the above-listed claims withdrawn from consideration by the Examiner read on the elected species, i.e., the species represented by Example 1. Although it is believed that this point will become moot by the allowance of generic claims encompassing all disclosed species, Applicant would note for the record examples of how a number of these claims read on the disclosed species. For example, claim 6 is dependent upon claim 1, which the Examiner has indicated to read on the elected species. Claim 6 recites that: "the second precursor molecule is a polymer with vinyl groups pendant to the polymer chain." The Examiner notes in the Action that the second precursor molecule of the elected species is polydimethylsiloxane with terminal vinyl groups, but does not show how a polydimethylsiloxane with terminal vinyl groups is not a "polymer with vinyl groups pendant to the polymer chain" as recited in claim 6. Claim 7 is dependent upon claim 6, and recites that: "the polymer is a polysiloxane with vinyl groups pendent to the polymer chain." There is no explanation in the Action how polydimethylsiloxane with terminal vinyl groups is not a "polysiloxane with vinyl groups pendent to the polymer chain." Claim 8 is dependent upon claim 7, and recites a Markush group including: "polydimethylsiloxane with vinyl substituents." There is no explanation in the Action how polydimethylsiloxane with terminal vinyl groups is not a "polydimethylsiloxane with vinyl substituents."

With respect to the first precursor molecule, claim 25 depends from claim, 21, which the Examiner has indicated to read on the elected species. Claim 25 recites that: "the first precursor molecule is a polymer with a silicon hydride group on each terminus." The Examiner notes in the Action that the first precursor molecule of the elected species is a copolymer of dimethylsiloxane and hydromethylsiloxane which has silicon hydride groups distributed along the chain, but does not show how a copolymer of dimethylsiloxane and hydromethylsiloxane which has silicon hydride groups distributed along the chain is excluded by the language of claim 25, which recites that: "the first precursor molecule is a polymer with a silicon hydride group on each terminus."

The above remarks are provided only as examples of claims that are believed to read on the elected species, and are therefore believed to have been improperly withdrawn from consideration in the present case. Additional claims are also believed to read on the elected species. As stated above, however, Applicants submit that generic claims encompassing all disclosed species are allowable in the present case, and that the withdrawal of claims reading on the elected species will become a moot point. Remarks addressing the remaining issues presented in the outstanding Office Action are presented below.

Correction of Claim Dependencies

In the outstanding Office Action, claims 9-11 and 153 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The basis for each of these rejections is that claims 9 and 153 depend from claims that have previously been cancelled. Applicants have by

the above amendments corrected the dependencies as suggested by the Examiner. It is therefore believed that this rejection is overcome, and Applicants respectfully request withdrawal thereof.

Traversal of Art Rejections

In the outstanding Office Action, claims 1, 4, 9-11, 20-24, 43, 46, 103, 106 and 147 are rejected under 35 U.S.C. §102(b), as being anticipated by Cavezzan et al. In traversal of this rejection, Applicants submit that these claims cannot properly be found to be anticipated by Cavezzan et al. because each and every element of the claimed invention is not found, either expressly or inherently, in the Cavezzan et al. reference.

Each of independent claims 1 and 103 recites a "method of forming a chemically selective sorbent film" that includes placing a defined composition on a substrate and exposing at least a portion of the composition to light "whereby the composition will become a chemically selective sorbent film." As stated in the specification: "The term 'chemically selective' means that the film will absorb some chemical species more than other chemical species, and thus be selective for those species that are more strongly absorbed." (Specification, page 2). The specification also describes in great detail how the invention provides such "chemically selective" films, such as, for example, by providing precursors having specifically defined functionality in certain embodiments and by controlling the degree of cross-linking to ensure that that the resulting "chemically selective sorbent film" has desired physical properties to have desired functionality. An excellent feature of the invention, and that it is believed is not taught or suggested by the cited art, is that the functionality of the precursor molecules are not eliminated by the hydrosilylation reaction. Thus, the invention provides processes in which the chemical selectivity of the film can be advantageously controlled in the preparation and/or selection of precursor molecules.

Glass to Rubber transition Temp.

Cavezzan, in contrast, discloses a fabrication process for making "microelectronic" devices; the processes including the placement of a negative resist layer over a device being processed. A person of ordinary skill in the art will recognize that negative resist processing involves the placement of a rugged, inert resist barrier over a device so that the underlying layers can be etched away, typically by contacting the underlying layers (and the resist barrier) with very harsh chemicals or other processing conditions. It is thus apparent to a person of ordinary skill in the art that negative resist layers described in Cavezzan must be very durable to function as described, i.e., to be able to withstand such harsh conditions. As such, a person of ordinary skill in the art will recognize that the negative resist layer described therein would be highly cross-linked, and would have a high glass-to-rubber transition temperature. Such a high degree of crosslinking and such high glass-to-rubber transition temperatures would make the compositions described in Cavezzan very slow to absorb any chemical, and the compositions described therein would thus be unsuitable for use as a "chemically selective film" as described and claimed in the present application. Accordingly, the claims of the present application distinguish Cavezzan, and Cavezzan therefore cannot be found to anticipate these claims.

In the outstanding Office Action, claims 2 and 104 are rejected under 35 U.S.C. §103(a), as being unpatentable over Cavezzan et al. as applied to claims 1 and 103 above, and further in view of Oxman et al. In traversal of this rejection, Applicants submit that the Examiner has not established a *prima facie* case of obviousness because the cited references, alone or in combination, do not disclose all elements of the pending claims, and because there has been identified no teaching, suggestion or motivation to modify the cited references to arrive at the present invention.

As stated above, Cavezzan discloses methods for making and using rugged resist layers, but does not disclose methods for making chemically selective sorbent films as described and

claimed in the present application. Indeed, Cavezzan teaches away from the present invention because a significant decrease in the degree of crosslinking in the Cavezzan composition, as would be necessary to make chemically selective sorbent films of the present invention, would render the Cavezzan composition unsuitable for its intended use, i.e., its use as a resist. Furthermore, Applicants submit that the combination of Cavezzan with Oxman does not render the subject claims obvious under §103 because the Oxman reference does not make up for the shortcomings in the disclosure of Cavezzan. The Oxman reference does not supply any teaching, suggestion or motivation to modify Cavezzan in such a way as to arrive at the present invention.

Oxman discloses a process for the "actinic radiation-activated addition reaction of a compound" and states that: "An important application of the process and compositions of the invention is as a visible light curable impression material for dental applications." The stated advantages of the compositions and process in Oxman are: (1) the reaction composition will not react prematurely, (2) because heat is not required, the reaction can be carried out on the surface of heat-sensitive substrate without adversely affecting the substrate, (3) actinic radiation curing requires less energy than does thermal curing, (4) greater safety attributed to visible radiation than ultraviolet radiation, (5) the composition allows the cure of unusually thick sections of material, and (6) low levels of catalyst can be used. There is no mention made in Oxman of any chemical functionality of the cured material. Indeed, in view of the stated use of the composition described in Oxman as an impression material for dental applications, it is apparent that the composition described therein is inert under conditions in which it is intended to be used. A person of ordinary skill in the art will readily appreciate that the Oxman patent does not disclose a process for making a "chemically selective film" as described and claimed in the present application. As discussed above with respect to Cavezzan, the purpose of the Oxman composition/process is to provide

compositions having robust physical characteristics; but is devoid of any disclosure of a process or composition providing "chemically selective" functionality as described and claimed in the present application. Furthermore, an advantage stated in the Oxman patent of the composition described therein is that "unusually thick sections of material" can be made. A person of ordinary skill in the art will recognize that a thick section of material will not have "chemically selective" functionality as the thin films described and claimed in the present application. A material that is made for the specific purpose of withstanding harsh conditions, such as a negative resist as described in Cavezzan, or significant mechanical stresses, such as a material used for dental applications as described in Oxman, would not be made to have chemical functionality as described in the present application. Accordingly, the Cavezzan and Oxman references teach away from the present invention, and the combination of Cavezzan and Oxman asserted by the Examiner cannot properly support a *prima facie* case of obviousness under 35 U.S.C. §103. Withdrawal of this rejection is therefore respectfully requested.

In the outstanding Office Action, claims 48-50, 101, 149-151, 153, 154 and 202 are rejected under 35 U.S.C. §103(a), as being unpatentable over Cavezzan et al. in view of Oxman et al. and Sachdev et al. In traversal of this rejection, Applicants submit that the Examiner has not established a *prima facie* case of obviousness because the cited references, alone or in combination, do not disclose all elements of the pending claims, and because there has been identified no teaching, suggestion or motivation to modify the cited references to arrive at the present invention.

Applicants submit that the combination of Sachdev with Cavezzan and Oxman does not render the subject claims obvious under §103 because the Sachdev reference does not make up for the shortcomings in the disclosures of Cavezzan and Oxman as discussed above. The Sachdev reference does not supply any teaching, suggestion or motivation to modify Cavezzan or Oxman in

such a way as to arrive at the present invention. Sachdev, like Cavezzan, describes a microelectronic fabrication process in which layers are "wet etched" after the placement of photoresist masks. This reference also fails to disclose any possibility of a "chemically selective film" as described and claimed in the present application, and provides no suggestion or motivation to a person of ordinary skill in the art to modify the Cavezzan or Oxman references to arrive at the present invention. In contrast, modification of the compositions described therein to decrease the amount of cross-linking and to decrease the glass-to-rubber transition temperatures thereof would render the compositions unsuitable for their intended purposes. Accordingly, the combinations of references asserted by the Examiner cannot support a *prima facie* case of obviousness under 35 U.S.C. §103, and withdrawal of this rejection is therefore respectfully requested.

In the outstanding Office Action, claims 1, 2, 4, 9-11, 20-24, 43 and 46 are rejected under 35 U.S.C. §102(b), as being anticipated by Oxman et al. In traversal of this rejection, Applicants submit that these claims cannot properly be found to be anticipated by Oxman et al. because each and every element of the claimed invention is not found, either expressly or inherently, in the Cavezzan et al. reference.

As discussed above, Oxman discloses a process for the "actinic radiation-activated addition reaction of a compound" and states that: "An important application of the process and compositions of the invention is as a visible light curable impression material for dental applications." One stated advantage of the compositions and process in Oxman is that the composition allows the cure of unusually thick sections of material. There is no mention made in Oxman of the chemical functionality of the cured material. A person of ordinary skill in the art will readily appreciate that the Oxman patent does not disclose a process for making a "chemically selective film" as described and claimed in the present application. As discussed above, the

purpose of the Oxman composition/process is to provide compositions having robust physical characteristics; but this patent is devoid of any disclosure of a process or composition providing "chemically selective" functionality as described and claimed in the present application. Accordingly, the claims of the present application also distinguish Oxman. Furthermore, a person of ordinary skill in the art will appreciate that the materials described in Oxman would not inherently possess the characteristics of a "chemically selective film" as described in the present application. A material that is made for the specific purpose of withstanding significant mechanical stresses, such as a material used for dental applications as described in Oxman, would have a high degree of crosslinking and thus a high glass-to-rubber transition temperature, and would not be made to have chemical functionality as described in the present application.

In the outstanding Office Action, claims 48-50 and 101 are rejected under 35 U.S.C. §103(a), as being unpatentable over Oxman et al. in view of Murai et al. In traversal of this rejection, Applicants submit that the Examiner has not established a *prima facie* case of obviousness because the cited references, alone or in combination, do not disclose all elements of the pending claims, and because there has been identified no teaching, suggestion or motivation to modify the cited references to arrive at the present invention.

Applicants submit that the combination of Murai with Oxman does not render the subject claims obvious under §103 because the Murai reference does not make up for the shortcomings in the disclosure of Oxman as discussed above. The Murai reference does not supply any teaching, suggestion or motivation to modify Oxman in such a way as to arrive at the present invention. As stated in the outstanding Action, Murai describes the use of epoxy-functional siloxane to improve the adhesion of a composition to a substrate. The Action states that: "As examples for the epoxy-functional siloxane, Murai teaches (col.2, lines 10-16) gamma-glycidoxypropyltrimethoxysilane,

gamma-glycidocypropyltriethoxysilane, and beta-(3,4-epoxycyclohecyl)ethyltrimethoxysilane (all of which are present trimethoxysilane coupling agent or present triethoxysilane coupling agent of claim 50)." Applicants submit, however, that the combination of Murai with Oxman does not support a *prima facie* case of obviousness under 35 U.S.C. §103 because this reference also fails to disclose any possibility of a "chemically selective film" as described and claimed in the present application. Furthermore, Murai provides no suggestion or motivation to a person of ordinary skill in the art to modify the Oxman reference to arrive at the present invention. As stated above, modification of the composition described in Oxman to decrease the amount of cross-linking and to decrease the glass-to-rubber transition temperatures thereof would render the composition unsuitable for its intended purpose. Accordingly, the combinations of references asserted by the Examiner cannot support a *prima facie* case of obviousness under 35 U.S.C. §103, and withdrawal of this rejection is therefore respectfully requested.

In the outstanding Office Action, claims 47 and 102 are rejected under 35 U.S.C. §102(b), as being anticipated by Nelson et al. In order to expedite the allowance of the present application, Applicants have above requested cancellation of claims 47 and 102, without prejudice to the pursuit thereof in a continuing application.

In the outstanding Office Action, claim 148 is rejected under 35 U.S.C. §103(a), as being unpatentable over Cavezzan et al. as applied to claim 103 above, and further in view of Nelson et al. In traversal of this rejection, Applicants submit that the Examiner has not established a *prima facie* case of obviousness because the cited references, alone or in combination, do not disclose all elements of the pending claims, and because there has been identified no teaching, suggestion or motivation to modify the cited references to arrive at the present invention.

As stated above, Cavezzan discloses methods for making and using rugged resist layers, but does not disclose methods for making chemically selective sorbent films as described and claimed in the present application. Indeed, Cavezzan teaches away from the present invention because a decrease in the degree of crosslinking in the Cavezzan composition would render the composition unsuitable for its intended use as a resist. Furthermore, Applicants submit that there is no motivation to be found in the cited art to combine the teachings of Cavezzan with the teachings of Nelson, and, indeed, the combination thereof would render the Cavezzan compositions unsuitable for their intended use. As discussed above, a modification to the Cavezzan composition that would be necessary to render it suitable for use as a chemical sensor, as described and claimed in the present application, would require a significant reduction in the degree of crosslinking, and a significant reduction in its glass-to-rubber transition temperature. Such changes would render the composition unsuitable for use as a resist as described in the Cavezzan reference. Therefore, prior to the present invention, a person of ordinary skill in the art would not have modified Cavezzan in the manner suggested by the Examiner, and the combination asserted by the Examiner therefore does not establish a *prima facie* case of obviousness of claim 148.

In the outstanding Office Action, claim 203 is rejected under 35 U.S.C. §103(a), as being unpatentable over Cavezzan et al. in view of Oxman et al. and Sachdev et al as applied to claim 149 above, and further in view of Nelson et al. In traversal of this rejection, Applicants submit that the Examiner has not established a *prima facie* case of obviousness because the cited references, alone or in combination, do not disclose all elements of the pending claims, and because there has been identified no teaching, suggestion or motivation to modify the cited references to arrive at the present invention.

For the reasons discussed above, Applicants submit that there is also no motivation to be found in the cited art to combine the teachings of Cavezzan, Oxman and Sachdev with the

teachings of Nelson, and, indeed, the combination thereof would render the Cavezzan, Oxman and Sachdev compositions unsuitable for their intended use as described therein. A modification to the Cavezzan, Oxman and Sachdev compositions that would be necessary to render them suitable for use as a chemical sensor, as described and claimed in the present application, would require a significant reduction in the degree of crosslinking, and a significant reduction in their glass-to-rubber transition temperature. Such changes would render the compositions unsuitable for use as a resist as described in the Cavezzan and Sachdev references or for use as a dental appliance as described in Oxman. Therefore, prior to the present invention, a person of ordinary skill in the art would not have modified Cavezzan, Oxman or Sachdev in the manner suggested by the Examiner, and the combination asserted by the Examiner therefore does not establish a *prima facie* case of obviousness of claim 203.

In addition to the above, Applicant submits that dependent claims satisfy the novelty and inventive step requirements at least for the same reasons that the claims from which they depend satisfy these requirements. In this regard, claims 2, 4, 6-31 and 38-45 depend from claim 1, and are allowable at least for the reasons claim 1 is allowable and for other reasons. Claims 49 and 50 depend from claim 48, and are allowable at least for the reasons claim 48 is allowable and for other reasons. Claims 104 and 106 depend from claim 103, and are allowable at least for the reasons claim 103 is allowable and for other reasons. Claims 150, 151, 153, 154, 166, 168, and 169 depend from claim 149, and are allowable at least for the reasons claim 149 is allowable and for other reasons. Although the above discussion is based primarily upon features recited in independent claims, dependent claims pending in this application define additional features of various embodiments of the invention, and are patentable for additional reasons as well.

Applicant would also draw the Examiner's attention to new claims 205-220 presented herein. These claims are also believed to define patentable subject matter that is novel and non-obvious over the references of record. Applicants therefore respectfully request an indication that these claims are in condition for allowance.

CLOSING

In view of the above, Applicant respectfully submits that the present application, as amended and including pending claims 1, 2, 4, 6-31, 38-46, 48-50, 101, 103, 104, 106, 147-151, 153, 154, 166, 168, 169 and 202-220, is in condition for allowance. Action to that end is respectfully requested.

Attached hereto is 1 page that presents a marked-up version of the changes made to claims 9 and 153 by the current amendment. This attachment is captioned "VERSION WITH MARKED CHANGES".

If there are any remaining issues that can be addressed telephonically, the Examiner is invited to contact the undersigned to discuss the same.

Respectfully submitted,

By _____

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VERSION WITH MARKED CHANGES

Claims 47 and 102 have been cancelled without prejudice to the pursuit thereof in a continuing application.

New claims 205-220 have been added.

Claims 9 and 153 have been amended as follows:

9. The method of claim [5]4 where the second precursor molecule is a polymer with a carbon-carbon multiple bond on each terminus.

153. (Once Amended) The method of claim [152]149 where the catalyst is platinum (II) bis(acetylacetonate).